

ABSTRACT

An improved focusing coupler device for coupling the image capturing portion of an endoscope to a video camera is disclosed. The coupler device includes a housing having an elongate internal chamber defining an optical pathway for connecting the optical image paths of the endoscope and the camera, first and second windows closing off the opposite ends of the chamber, a lens transport assembly disposed in the chamber for relative movement between the ends of the chamber, the lens transport assembly comprising a lens carrier that defines a longitudinal series of rack gear teeth and is movable between the opposite ends of the chamber, and at least one focusing lens mounted to the lens carrier in coaxial alignment with the longitudinal axis of the chamber. The housing also includes a cavity containing a drive device and a passageway communicating with the midsection of the chamber and the distal end of the cavity chamber, and gear means for connecting the rack gear teeth to the drive device so as to translate rotational movement of the drive shaft in the cavity through the passageway to the rack gear teeth and thereby to selectively longitudinally move the lens transport assembly in the chamber.